

WHAT IS CLAIMED IS:

1. An exposure apparatus which projects a pattern on an original onto a substrate, comprising:

an original stage which supports the original;

5 a substrate stage which supports the substrate;

a reference pattern which is arranged on said original stage and to align said original stage and said substrate stage; and

a mark which is arranged on said original stage, 10 has a known relative position from the reference pattern, and is to be projected onto the substrate to form an alignment mark on the substrate.

2. An apparatus according to claim 1, further comprising a measurement unit which measures a position 15 of the alignment mark formed on the substrate.

3. An apparatus according to claim 1, further comprising a control unit which controls a position of said original stage and a position of said substrate stage.

20 4. An apparatus according to claim 1, further comprising a measurement unit which measures a position of the alignment mark formed on the substrate; and a control unit which controls a position of said original stage and a position of said substrate stage based on a 25 measurement result by said measurement unit.

5. An apparatus according to claim 4, wherein said control unit controls the position of said original

stage and the position of said substrate stage so as to project the mark in a region which is in a peripheral region of the substrate and outside a region where the pattern is projected.

5 6. An apparatus according to claim 1, wherein the marks of a plurality of kinds are arranged on said original stage.

7. An apparatus according to claim 6, wherein the mark includes an identification mark for identifying
10 the kind.

8. An apparatus according to claim 1, wherein the marks of a plurality of kinds are arranged on said original stage, and said apparatus further comprises a measurement unit which measures a position of the
15 alignment mark formed on the substrate based on the kind.

9. An apparatus according to claim 8, wherein said measurement unit measures a position of an alignment mark of a second kind of the plurality of kinds based
20 on a position of an alignment mark of a first kind of the plurality of kinds.

10. An apparatus according to claim 1, wherein the reference pattern and the mark are arranged on a plate which is arranged on said original stage.

25 11. An exposure method of projecting a pattern on an original onto a substrate, comprising steps of:

measuring a position of an alignment mark formed

on the substrate;

projecting the pattern onto the substrate based on a measurement result in said measurement step; and

projecting onto the substrate based on the measurement result, a mark which has a known relative position from a reference pattern arranged on an original stage and to align the original stage and a substrate stage, and is arranged on the original stage and to form an alignment mark on the substrate.

10 12. A method according to claim 11, further comprising a step of controlling a position of the original stage and a position of the substrate stage based on the measurement result.

13. A method according to claim 12, wherein in said control step, the position of the original stage and the position of the substrate stage are so controlled as to project the mark in a region which is in a peripheral region of the substrate and outside a region where the pattern is projected.

20 14. A method according to claim 11, wherein the marks of a plurality of kinds are arranged on the original stage.

15. A method according to claim 14, wherein the mark includes an identification mark for identifying the kind.

25 16. A method according to claim 11, wherein the marks of a plurality of kinds are arranged on the original

stage, and in said measurement step, a position of the alignment mark formed on the substrate is measured based on the kind.

17. A method according to claim 16, wherein in said
5 measurement step, a position of an alignment mark of a second kind of the plurality of kinds is measured based on a position of an alignment mark of a first kind of the plurality of kinds.

18. A software for causing a computer to control
10 execution of an exposure method defined in claim 11.

19. A device manufacturing method comprising a step of exposing a substrate to a pattern using an exposure apparatus defined in claim 1.

20. A lithographic system comprising an exposure
15 apparatus defined in claim 1.